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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/713,400	11/15/2000	Daisuke Arai	WATA:009	3120

7590 04/09/2003
ROSSI & ASSOCIATES
P.O. Box 826
Ashburn, VA 20146-0826

EXAMINER

PARKER, KENNETH

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/713,400

Applicant(s)

ARAI ET AL.

Examiner

Kenneth A Parker

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 15-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Muratomi et al. Muratomi discloses a substrate n with stacked layers having a reflectance of about 40 and flat over the visable spectrum (see figs 1-2). Including alternating low and high films of 1.38 and 1.64 and also 1.38 and 2.35 (see column 4, lines 21-69). No mention is made of the LCD, however, the limitation is in the preamble and therefore given weight only as intended use. As there is no reason the structure of Muratomi cannot be used in an LCD, this limitation is met by the reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo 6452654 in view of Shintani et al 5978056 and Chung et al US Patent 4,456,336.

Kubo discloses a transparent substrate 11 with a reflecting layer above to form a reflective pixel section. Kubo lacks the dielectric layers. Shintani et al Shintani et al discloses a substrate n with stacked layers including TiO₂ (which has an index of refraction of about 2.35, and SiO). Shintani teaches that by using a set of stacks of films such as these, reflection can be improved (explicitly disclosing 1, 2 and 4 stack sets, and teaching the more the better showing the number is a result effective variable against cost. Therefore it would have been obvious to one of ordinary skill, in the device of Kubo, to employ the dielectric stacks as taught by Shintani et al for enhancing the reflection. Still lacking from the disclosure is the indication that the low index material, SiO₂, is below 1.38, although the high material TiO₂, is above 1.8 (in fact it is above 2.0). The reference Chung et al is cited to show, that the normal range of SiO₂ is from 1.33 to 1.46 (column 7, lines 5-10), and Chung indicates that a lower refractive index reflection enhancing dielectric layer is preferably below 1.38. (column 3, lines 9-18). As the reflection enhancement was improved by the larger mismatch (lower below 1.38), and the enhancement of reflection is what is being performed, the selection of an SiO₂ of below 1.38 would have been obvious to those of ordinary skill.

Still lacking from the disclosure is the result of what the reflection levels would be. As the structures are substantially the same as disclosed by applicant (although the use is different), the result should also be substantially the same. See MPEP 2112:

ONCE A REFERENCE TEACHING PRODUCT APPEARING TO BE
SUBSTANTIALLY IDENTICAL IS MADE THE BASIS OF A REJECTION,
AND THE EXAMINER PRESENTS EVIDENCE OR REASONING

TENDING TO SHOW INHERENCY, THE BURDEN SHIFTS TO THE
APPLICANT TO SHOW AN UNOBVIOUS DIFFERENCE

Further, the exact level of reflection is clearly taught by the reference to be a result effective variable, where the higher the number of pairs layers the higher the reflection but the larger the cost (and reaching a diminishing return). As it has been judicially determined that the selection of a result effective variable was within the ordinary level of skill, the selection of the exact number of pairs of layers and therefore exact reflection by the dielectric mirror would have been obvious.

The thickness are shown in that the quarter wavelength of 550nm light (the wavelength considered the center of the visible spectrum though a material with 2.38 nm is slightly under 60, and the for materials with 1.38 it is around 100nm.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo 6452654, Shintani et al 5978056, and Chung et al US Patent 4,456,336 as applied above, and further in view of Teshirogi 4883343.

The use of diffusers was on the viewing side substrate (and therefore on the stack above the lower substrate) was notoriously well known for preventing dazzlement. This is taught by Teshiogi in the abstract. Therefore, one of ordinary skill would have been motivated to employ the diffusing film of Teshirogi for preventing dazzlement.

Allowable Subject Matter

Amending the claims appropriately to realize the behaviour of the film as providing a tranflective function for the LCD's light utilization would render the claims allowable.

Response to Arguments

Applicant's arguments with respect to claim have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

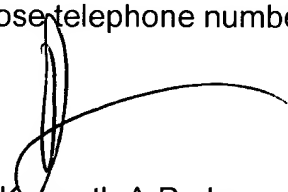
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth A Parker whose telephone number is 703-305-6202. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.



Kenneth A Parker
Primary Examiner
Art Unit 2871

April 6, 2003